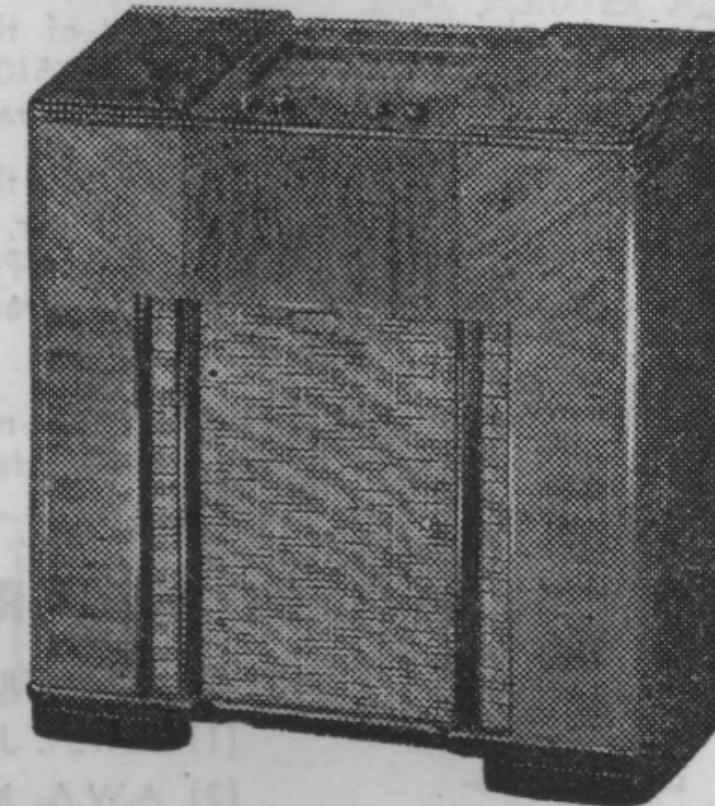


510-M portable radio set

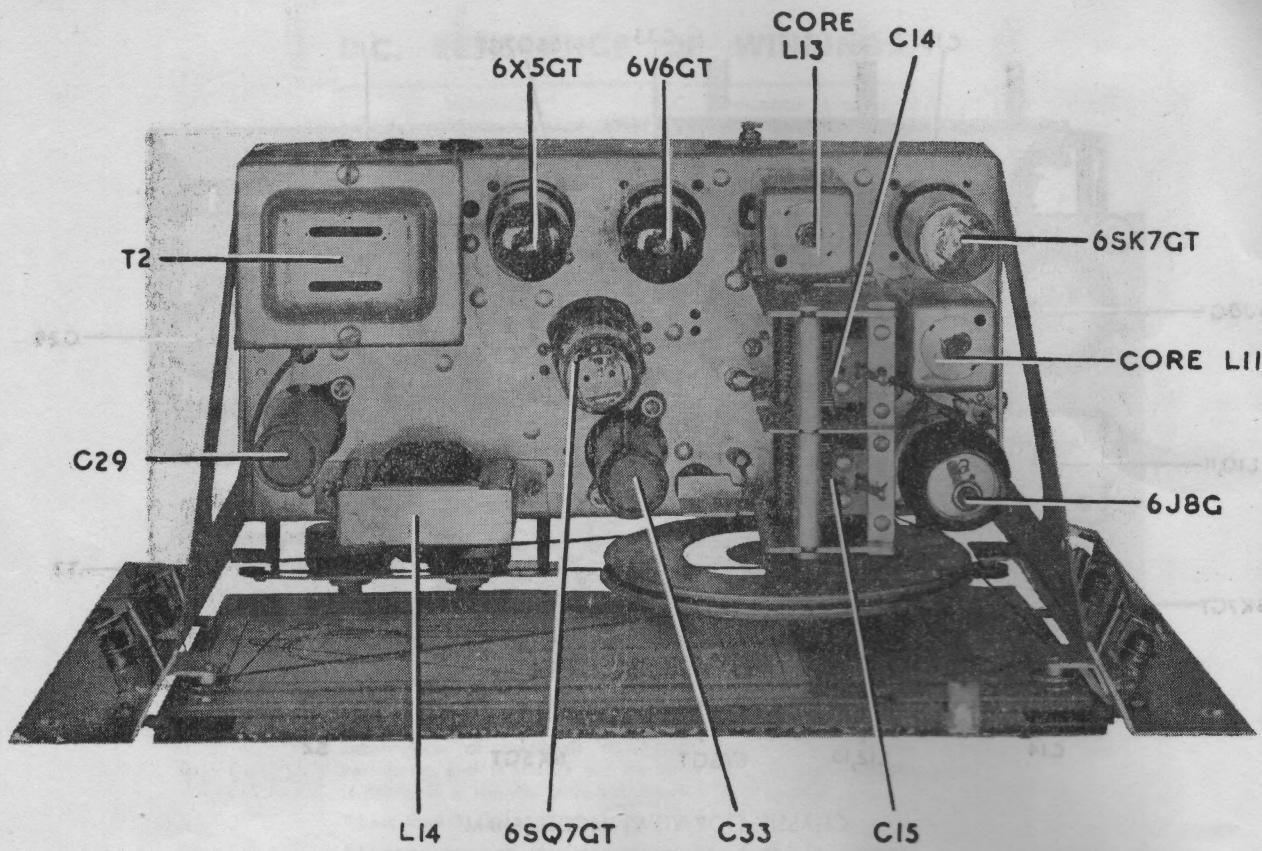


712-C

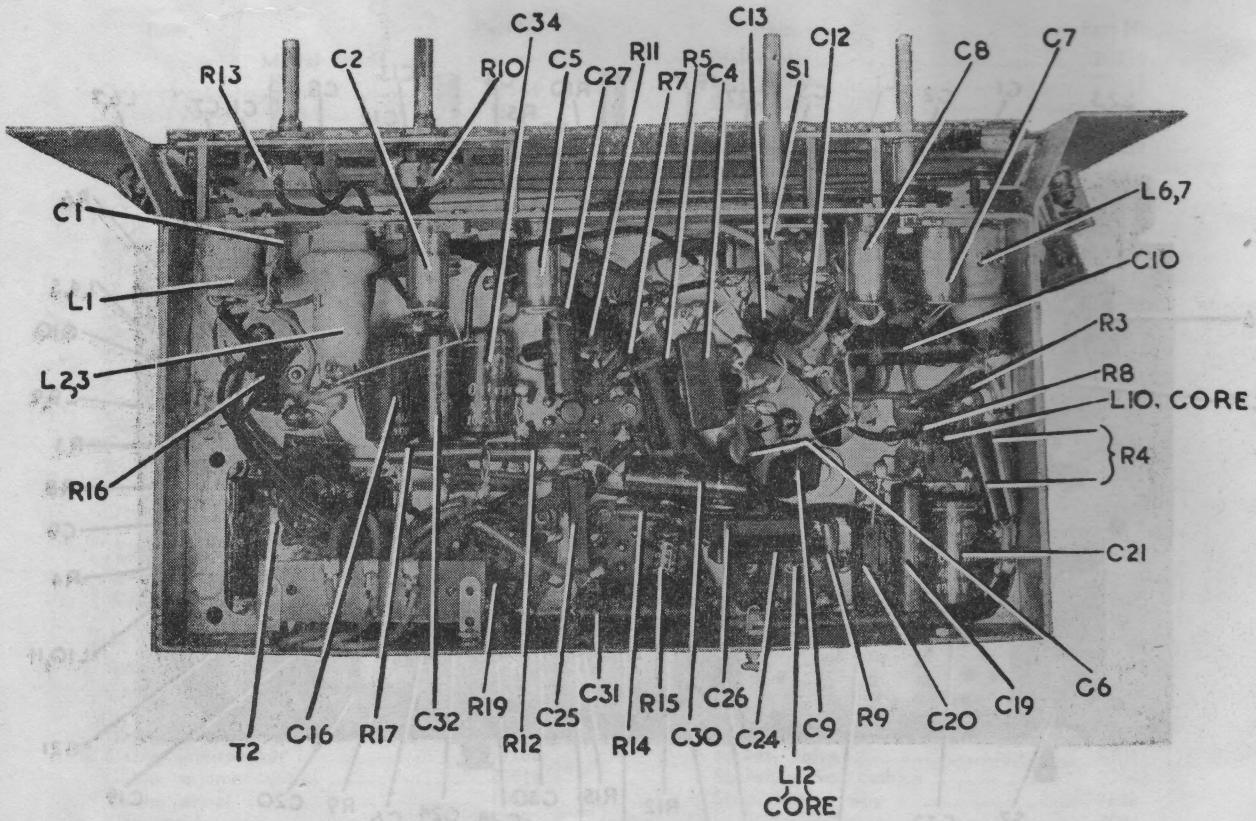
(715-C not illustrated)



801-G



CHASSIS (TOP VIEW) MODELS 712-C and 715-C



CHASSIS (UNDERNEATH VIEW) MODELS 712-C and 715-C

TECHNICAL INFORMATION AND SERVICE DATA

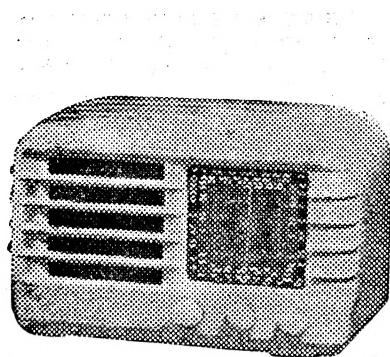


RADIOLA

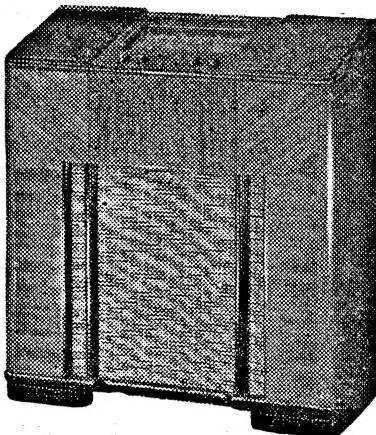
Models 510-M, 712-C, 715-C & 801-G

FIVE VALVE, TWO BAND, A.C. OPERATED SUPERHETERODYNES

ISSUED BY AMALGAMATED WIRELESS (A/SIA.) LTD.

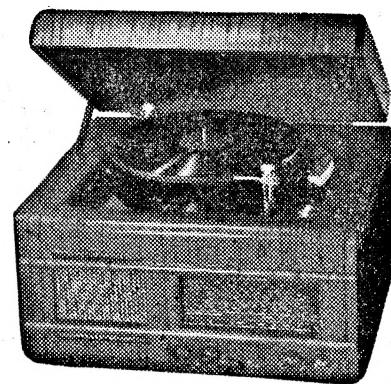


510-M



712-C

(715-C not illustrated)



801-G

ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGES:

Medium Wave 1600-540 Kc/s Short Wave 18.6 Mc/s (187.5-555 M.) (16-50 M.)

INTERMEDIATE FREQUENCY 455 Kc/s

POWER SUPPLY RATING 200-260 volts, 50-60 C.P.S.
(Models are produced with other voltage and frequency ratings.)

POWER CONSUMPTION 60 watts

DIAL LAMPS 6.3 volts, 0.25 amp. M.E.S.

VALVE COMPLEMENT:

- (1) 6J8G Converter.
- (2) 6SK7GT I.F. Amplifier.
- (3) 6SQ7GT Det., A.V.C. and A.F. Amplifier.
- (4) 6V6GT Output.
- (5) 6X5GT Rectifier.

LOUDSPEAKER:

Model 510-M.

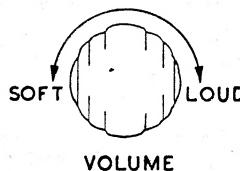
5 inch—code No. AA16. 12 inch—code No. AU42.
Transformer—XA2. Transformer—TU2.
V.C. Impedance—3 ohms at 400 C.P.S.
Field—1000 ohms. Permanent Magnet.

Model 801-G.

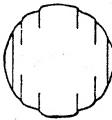
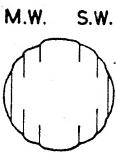
7 inch—code No. AY28 or AY38.
Transformer—XA2.
V.C. Impedance—3 ohms at 400 C.P.S.
Permanent Magnet.

UNDISTORTED POWER OUTPUT 3 watts

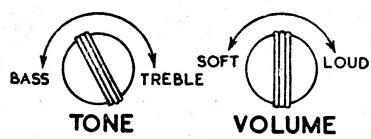
CONTROLS:



MODEL 510-M



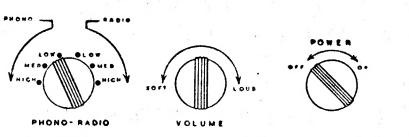
TUNING



MODEL 712-C



MODEL 715-C



MODEL 801-G

MECHANICAL SPECIFICATIONS.

	Height.	Width.	Depth.		Height.	Width.	Depth.
Cabinet Dimensions (inches)-				Carton Dimensions (inches)-			
510-M	8	12½	7½	510-M	10½	13½	8½
712-C, 715-C	32	30	13	712-C, 715-C	33	31½	14½
801-G	13½	20½	16½	801-G	14½	21½	18½
Chassis Base Dimensions (inches) ..	2½	11	5½	Weight (nett lbs.)-			
				510-M			14
				712-C, 715-C			56
				801-G			

GENERAL DESCRIPTION.

The models 510-M, 712-C, 715-C and 801-G are mantel, console, console, and table Radio-Phonograph Combination models respectively.

The 510-M is housed in an attractively designed moulded cabinet which is produced in three colours—ivory, green, and walnut. Features of design include:—Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and broadcast oscillator coil, air-dielectric trimming capacitors.

Features of the 712-C, 715-C and 801-G are similar to those of the 510-M but use a straight-line edge lighted dial with metropolitan stations printed in $\frac{1}{8}$ " high characters.

In addition the 801-G incorporates the Oak automatic record changer, features of this being:—New type crystal pick-up head—Permapoint needle plays 1000 records, uses 10" or 12" records, manual or automatic operation as required.

Synchronous motor and simple construction with minimum of working parts ensures trouble-free service.

ALIGNMENT PROCEDURE.

MANUFACTURER'S SETTING OF ADJUSTMENTS.

The receiver is tested by the manufacturers with precision instruments, and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis, and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

TESTING INSTRUMENTS.

- (1) A.W.A. Junior Signal Generator, type 2R3911 or
- (2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect an 0.25 megohm non-inductive resistor across the output terminals, and, for short-wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

- (3) Output Meter.

The instrument recommended should have an output impedance of 5000 ohms and a range of 5-3000 milliwatts. The meter should be connected across the primary of the loudspeaker transformer with the voice-coil of the loudspeaker open-circuit.

ALIGNMENT TABLE.

Order.	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output.
1	6J8G*	455 kc/s	540 kc/s	L13 core
2	6J8G*	455 kc/s	540 kc/s	L12 core
3	6J8G*	455 kc/s	540 kc/s	L11 core
4	6J8G*	455 kc/s	540 kc/s	L10 core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial terminal	600 kc/s	600 kc/s	L.F. osc. core adj. (L7)†
6	Aerial terminal	1500 kc/s	1500 kc/s	H.F. osc. adj.**
7	Aerial terminal	1500 kc/s	1500 kc/s	H.F. osc. adj. (C2)
Repeat adjustments 5, 6 and 7.				
8	Aerial terminal	16 Mc/s	16 Mc/s	H.F. osc. adj. ‡ o
9	Aerial terminal	16 Mc/s	16 Mc/s	H.F. aer. adj. § oo

* With grid clip connected. An 0.001 uF capacitor should be connected in series with the "high" side of the test instrument.

† Rock the tuning control back and forth through the signal.

‡ Use minimum capacity peak if two can be obtained. Check to determine that the trimmer has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s, where a weaker signal should be received.

§ Use minimum capacity peak if two can be obtained.

** C7 in models 510-M, 712-C, and 715-C; C8 in model 801-G.

o C8 in models 510-M, 712-C and 715-C; C9 in model 801-G.

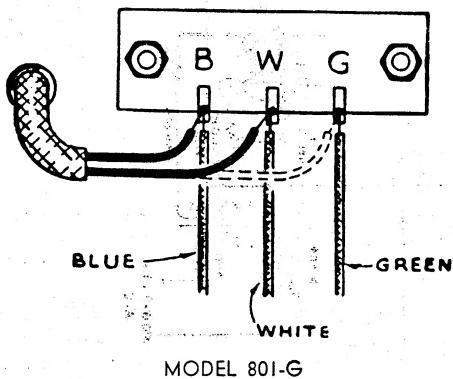
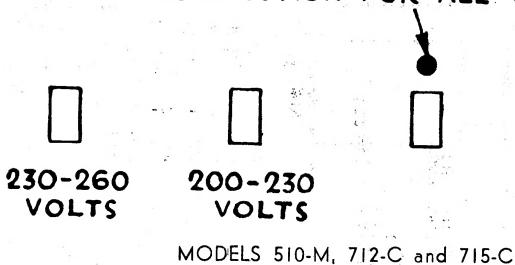
oo C5 in models 510-M, 712-C and 715-C; C6 in model 801-G.

LOUDSPEAKER SERVICE.

It is inadvisable to attempt loudspeaker repairs other than replacement of the transformer. The fitting of a new cone or the replacement of a field winding should be done only by service departments suitably equipped to do the work.

CONNECTION TO POWER SUPPLY.

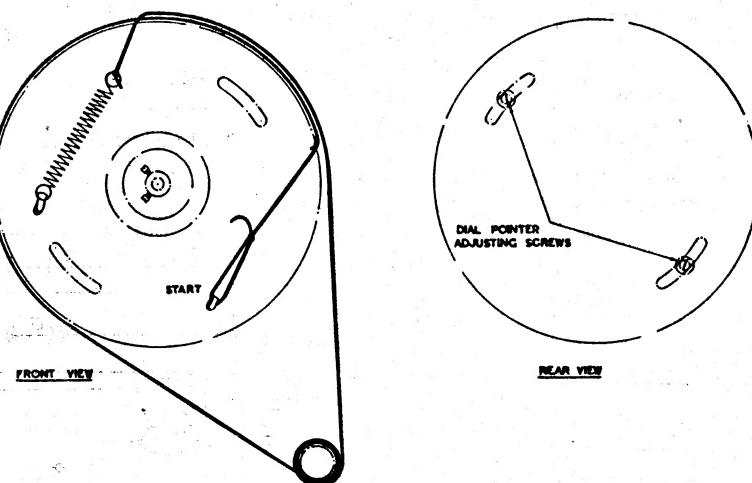
The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at the frequency stated on the label within the cabinet. The power supply connections are shown in the accompanying diagrams.

RED DOT INDICATES COMMON CONNECTION FOR ALL VOLTAGES**CHASSIS REMOVAL.****Model 510-M.**

First remove the knobs and felt washers—each knob is held by a set screw. Then, remove two screws from underneath the cabinet and withdraw the chassis.

Model 712-C, 715-C.

(1) Remove the knobs and felt washers. The knobs are each held by a set screw.

**SOCKET VOLTAGES**

Valves.	Cathode to Chassis. Volts.	Screen Grid to Chassis. Volts.	Anode to Chassis. Volts.	Anode Current mA.	Heater Volts.
6J8G Converter, M.W.	1.5	70	240	1	6.3
S.W.	2.0	70	240	1.3	—
Oscillator, M.W.	—	—	115	5	—
S.W.	—	—	115	5	—
6SK7GT I.F. Amplifier	0	70	240	5	6.3
6SQ7GT 2nd Det., A.V.C. and A.F. Amplifier	0	—	90*	0.6	6.3
6V6GT Output	13	240	225	40	6.3
6X5GT Rectifier	300	—	280 (AC)	—	6.3

Volts across back-bias resistor R16 (510, 712 and 715), R18 (801-G)—3.0.

Total H.T. current—60 mA.

Measured at 240 volts A.C. supply. No signal input. Volume Control maximum clockwise. Voltmeter, 1000 ohms per volt, measurements taken on highest scale giving accurate readable deflection.

*This reading may vary depending on the resistance of the voltmeter used.

(2) Disconnect loudspeaker cable.

(3) The chassis is held in the cabinet by four winged nuts, two at each end of the dial frame assembly.

Model 801-G.

The chassis is removed through the base of the cabinet as follows:

(1) Remove the knobs and felt washers.

(2) Disconnect the pick-up and loudspeaker cable and remove the Phono-motor connection plug from the socket on the chassis.

(3) Remove four screws from the bottom of the cabinet and withdraw chassis and board. The baseboard is fastened to the chassis by two screws.

DIAL POINTER ADJUSTMENT.**Model 510-M.**

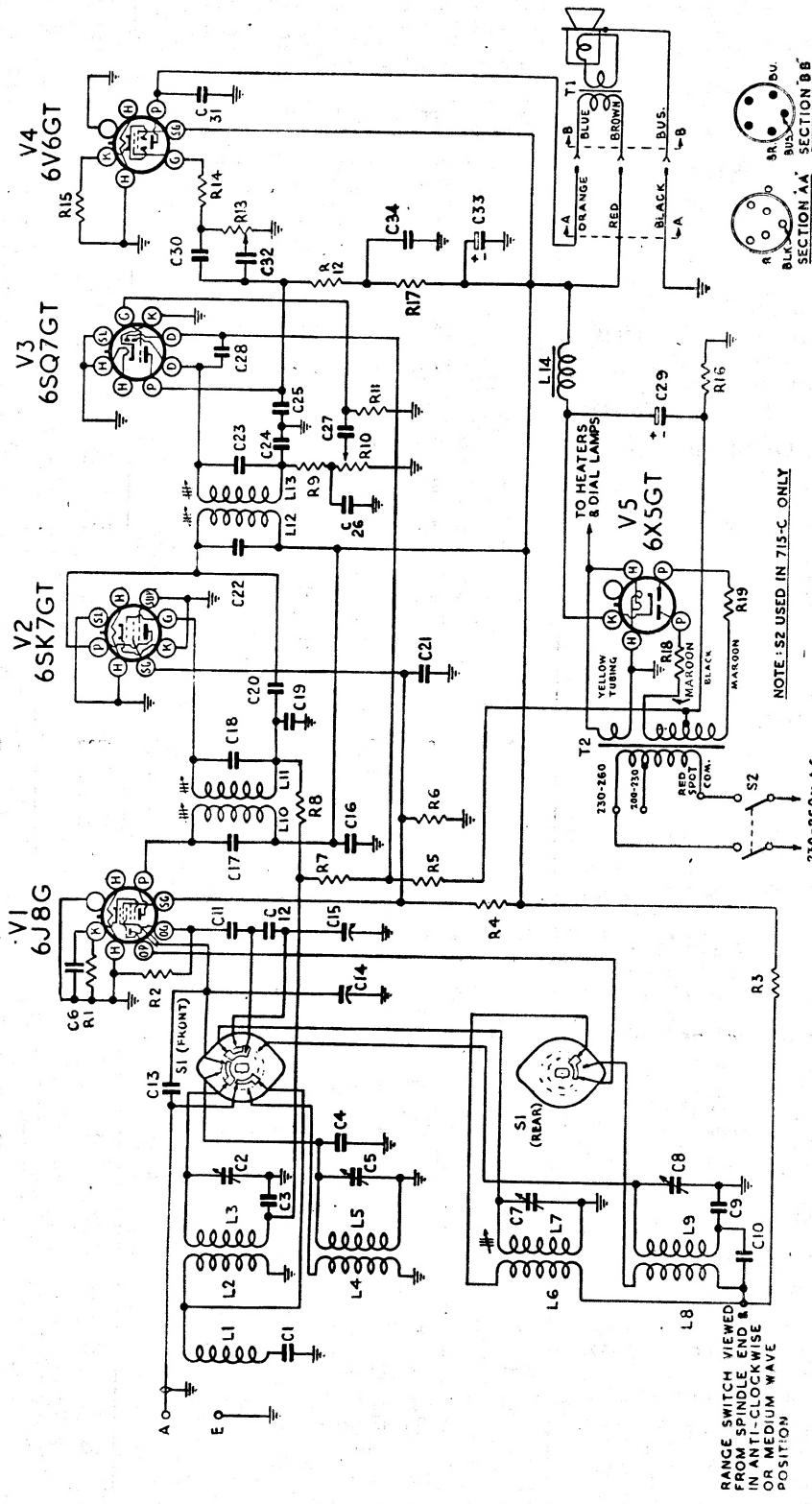
To shift the position of the dial pointer, loosen two screws in the rear of the drive drum—see accompanying diagram—move the pointer disc to the required position and retighten the screws.

Models 712-C, 715-C and 801-G.

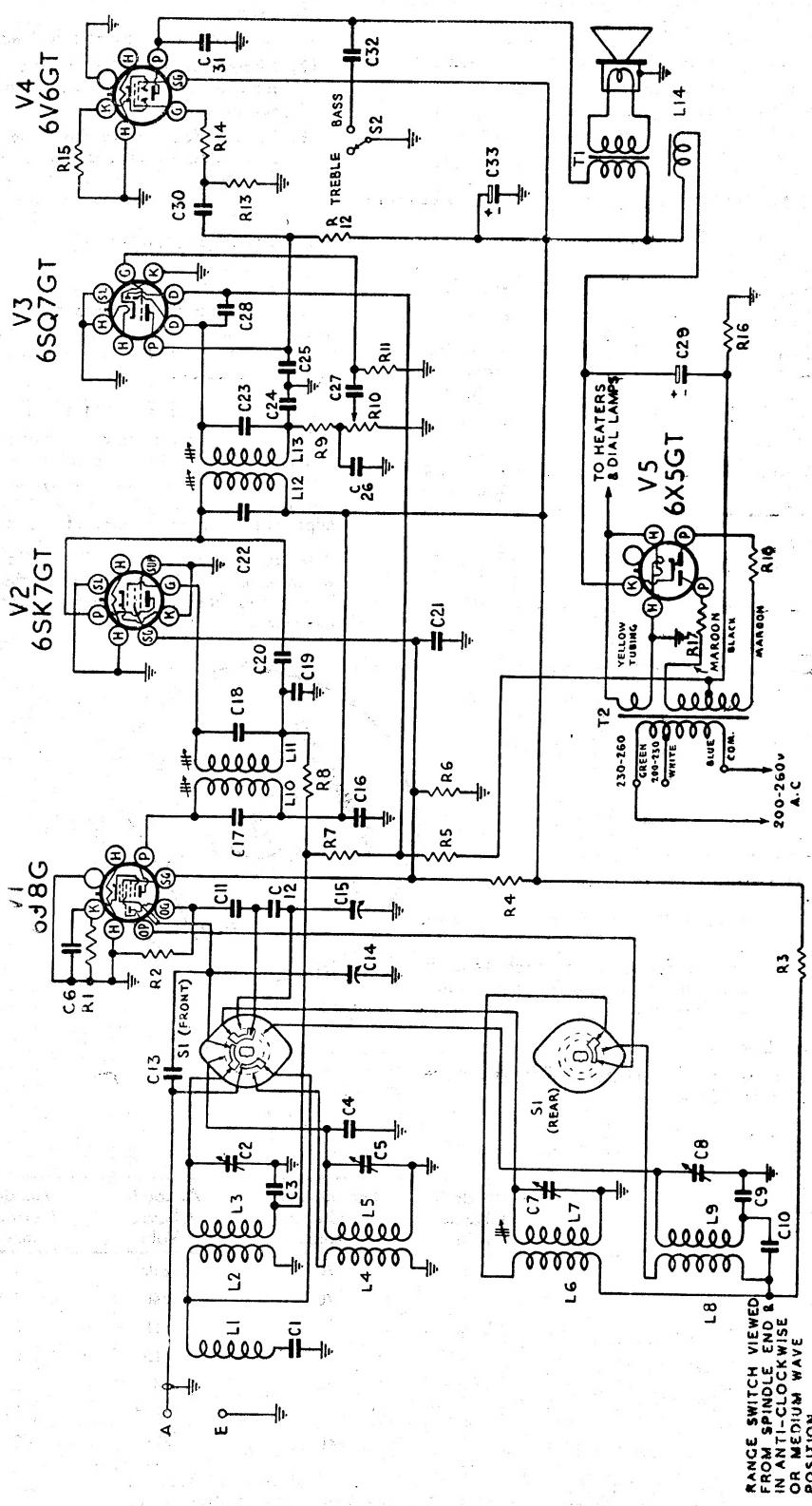
The dial pointer is held in position on the drive cord by two rubber lined clips. To alter the position of the pointer loosen the holding clips slightly, and move the pointer in the required direction. It is important to re-clamp the clips after any adjustment of the dial pointer.

To replace the Tuning Drive Cord, follow the diagram which is affixed to the back of the Dial Frame Assembly. This shows the route of the cord and the method of attachment.

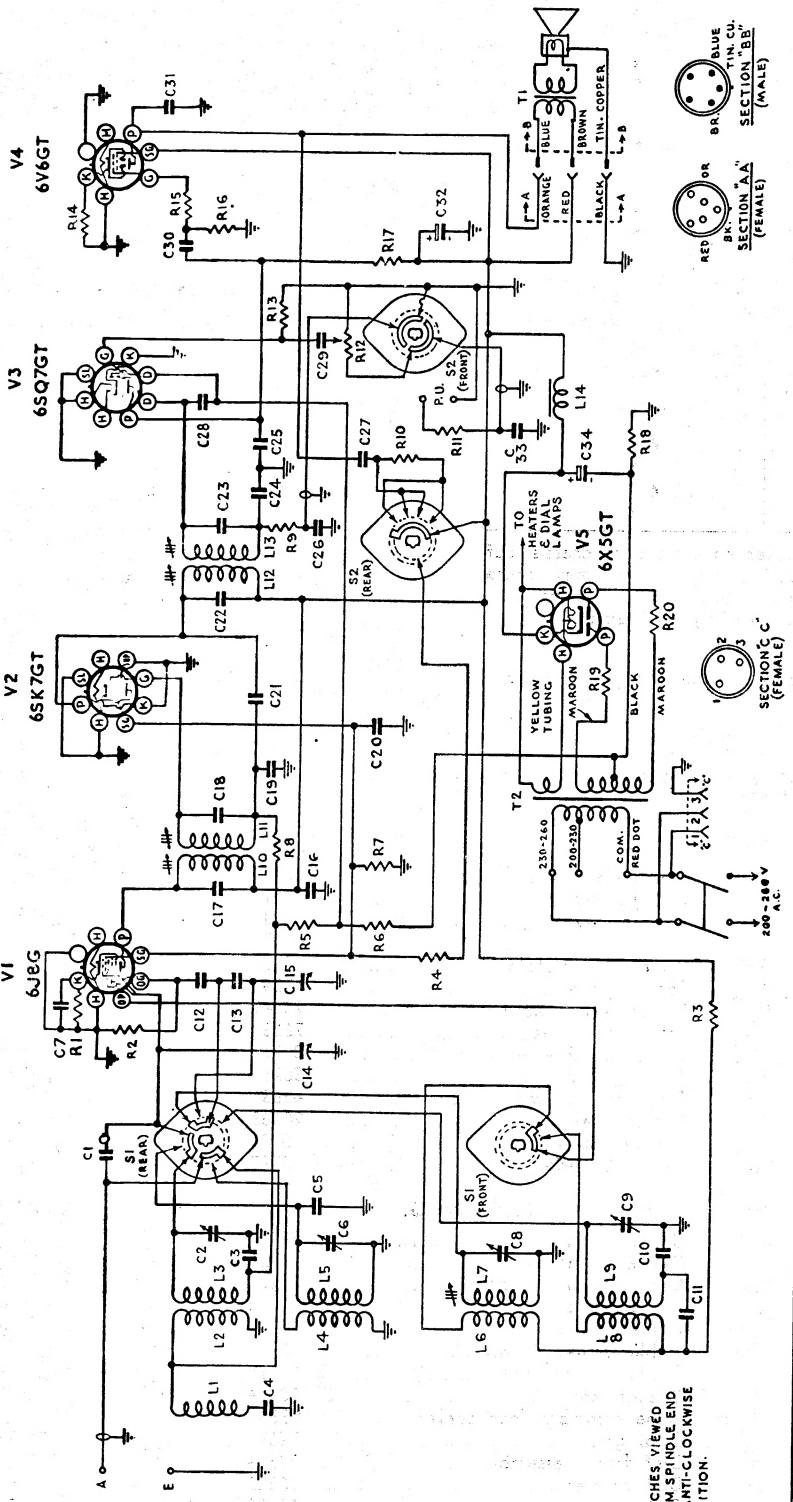
CIRCUIT DIAGRAM—Models 712-C & 715-C



CIRCUIT DIAGRAM—Model 510-M



CIRCUIT DIAGRAM AND CODE--Model 801-G



Circuit Code No.	Description.	Stock Code or Part No.	Circuit Code No.	Description.	Stock Code or Part No.	Circuit Code No.	Description.	Stock Code or Part No.	Circuit Code No.	Description.	Stock Code or Part No.
INDUCTORS.											
L1	I.F. filter (including C4)	9382	R11	0.2 megohm, $\frac{1}{2}$ watt	C11	.05 uF paper, 400 v.	C29	.01 uF paper, 600 v.	T1	Loudspeaker transformer	XA2
L2, L3	Aerial coil, 540-1600 Kc/s	15454	R12	0.5 megohm, Volume Control	C12	working	C30	working	T2	Power transformer, 50-60 C.P.S.	17859
L4, L5	Aerial coil, 6-18 Mc/s	15456	R13	10 megohms, 1 watt, wire wound	C13	70 uF mica					
L6, L7	Oscillator coil, 540-1600 Kc/s	9206A	R14	325 ohms, 1 watt, wire wound	C14	470 uF mica padde					
L8, L9	Oscillator coil, 6-18 Mc/s	15458	R15	40,000 ohms, $\frac{1}{2}$ watt	C15	12-430 uF tuning (ganged)	18211				
L10, L11	1st I.F. transformer	17646	R16	0.5 megohm, $\frac{1}{2}$ watt	C16	12-430 uF tuning (ganged)	18211				
L12, L13	(17640)* 2nd I.F. transformer	17646	R17	0.25 megohm, 1 watt	C17	0.1 uF paper, 400 v.	C33	500 uF mica			
L14	Filter choke	TU17	R18	50 ohms, 3 watt, wire wound	C18	70 uF mica	C34	8 uF 525 P.V. electrolytic			
					C19	.02 uF paper, 600 v.					
RESISTORS.											
R1	200 ohms, $\frac{1}{2}$ watt	C2	3-25 uF air trimmer	C20	0.1 uF paper, 400 v.	T1	Loudspeaker transformer	XA2			
R2	32,000 ohms, $\frac{1}{2}$ watt	C3	.05 uF paper, 200 v.	C21	14 uF mica	T2	Power transformer, 50-60 C.P.S.	17859			
R3	25,000 ohms, 1 watt	C4	50 uF silvered mica	C22	70 uF mica						
R4	25,000 ohms, 2 watt	C5	9 uF mica	C23	70 uF mica						
R5	1.6 megohms, $\frac{1}{2}$ watt	C6	3-25 uF air trimmer	19659	C24	100 uF mica					
R6	2.5 megohms, $\frac{1}{2}$ watt	C7	0.1 uF paper, 200 v.	C25	200 uF mica						
R7	20,000 ohms, 1 watt	C8	3-25 uF air trimmer	19659	C26	100 uF mica					
R8	0.1 megohms, $\frac{1}{2}$ watt	C9	3-25 uF air trimmer	19659	C27	.035 uF paper, 600 v.					
R9	50,000 ohms, $\frac{1}{2}$ watt	C10	4000 uF mica padde	C28	working						
R10	8,000 ohms, $\frac{1}{2}$ watt										

* Part number of winding only.

20509
20052

20507
20057

20506
20056

20505
20055

CIRCUIT CODE—Models 510-M, 712-C & 715-C

Circuit Code No.	Description.	Stock Code or Part No.	Circuit Code No.	Description.	Stock Code or Part No.	Circuit Code No.	Description.	Stock Code or Part No.	
INDUCTORS.									
L1	I.F. filter (including C1)	9382	R17	50,000 ohms, 1 watt (712-C, 715-C only)		C24	100 $\mu\mu$ F mica		
L2, L3	Aerial coil, 540-1600 kc/s	15454		(712-C, 715-C)		C25	200 $\mu\mu$ F mica		
L4, L5	Aerial coil, 6-18 Mc/s	15456	R18	100 ohms, $\frac{1}{2}$ watt		C26	100 $\mu\mu$ F mica		
L6, L7	Oscillator coil, 540-1600 kc/s	9206A	R19	100 ohms, $\frac{1}{2}$ watt (712-C, 715-C only)		C27	0.01 μ F paper, 600 v. working		
L8, L9	Oscillator coil, 6-18 Mc/s	15458	CAPACITORS.					C28	50 $\mu\mu$ F mica
L10, L11	1st I.F. transformer (17640)*	17646	C1	50 $\mu\mu$ F silvered mica		C29	8 μ F, 525 P.V. electrolytic		
L12, L13	2nd I.F. transformer (17640)*	17646	C2	3-25 $\mu\mu$ F air trimmer	19659	C30	0.02 μ F paper, 600 v. working (510-M only)		
L14	Loudspeaker field, 1000 ohms (510-M)		C3	0.05 μ F paper, 200 v. working	15422	C30	0.01 μ F paper, 600 v. working (712-C, 715-C only)		
L14	Filter choke, 1000 ohms (712-C)	TU17	C4	9 $\mu\mu$ F mica		C31	0.01 μ F paper, 600 v. working (510-M only)		
RESISTORS.									
R1	200 ohms, $\frac{1}{2}$ watt		C5	3-25 $\mu\mu$ F air trimmer	19659	C31	0.005 μ F paper, 600 v. working (712-C, 715-C only)		
R2	32,000 ohms, $\frac{1}{2}$ watt		C6	0.1 μ F paper, 200 v. working		C32	0.03 μ F paper, 600 v. working (510-M only)		
R3	25,000 ohms, 1 watt		C7	3-25 $\mu\mu$ F air trimmer	19659	C32	0.005 μ F paper, 600 v. working (712-C, 715-C only)		
R4	25,000 ohms, 2 watt		C8	3-25 $\mu\mu$ F air trimmer	19659	C33	16 μ F, 525 P.V. electrolytic		
R5	2.5 megohms, $\frac{1}{2}$ watt		C9	4000 $\mu\mu$ F mica (S.W. padder)		C34	0.1 μ F paper, 400 v. working (712-C, 715-C only)		
R6	20,000 ohms, 1 watt		C10	0.05 μ F paper, 400 v. working		TRANSFORMERS.			
R7	1.6 megohms, $\frac{1}{2}$ watt		C11	70 $\mu\mu$ F mica		T1	Loudspeaker Transformer (510-M)	XA2	
R8	0.1 megohm, $\frac{1}{2}$ watt		C12	470 $\mu\mu$ F mica (M.W. padder)		T1	Loudspeaker Transformer (712-C, 715-C)	TU2	
R9	50,000 ohms, $\frac{1}{2}$ watt		C13	4 $\mu\mu$ F mica		T2	Power, 50-60 C.P.S.	178598	
R10	0.5 megohm, volume control (510-M only)	6491	C14	12-430 $\mu\mu$ F variable, tuning (ganged)	18201	T2	Power, 40 C.P.S.	178618	
R10	0.5 megohm, volume control (712-C, 715-C only)	7927	C15	12-430 $\mu\mu$ F variable, tuning (ganged)	18201	SWITCHES.			
R11	10 megohms, 1 watt		C16	0.1 μ F paper, 400 v. working		S1	Range, single wafer, 4 pole, 2 position rotary (510-M)	20156	
R12	0.2 megohm, 1 watt		C17	70 $\mu\mu$ F mica		S1	Range, single wafer, 4 pole, 2 position rotary (712-C, 715-C)	20354	
R13	0.5 megohm, $\frac{1}{2}$ watt (510-M only)		C18	70 $\mu\mu$ F mica		S2	Tone, S.P.S.T., toggle (510-M)	20109	
R13	0.5 megohm, tone control (712-C, 715-C only)	7927	C19	0.02 μ F paper, 600 v. working		S2	Power, D.P.S.T. Rotary (715-C)	20052	
R14	40,000 ohms, $\frac{1}{2}$ watt		C20	14 $\mu\mu$ F mica					
R15	325 ohms, 3 watt		C21	0.1 μ F paper, 400 v. working					
R16	50 ohms, 3 watt		C22	70 $\mu\mu$ F mica					
R17	100 ohms, $\frac{1}{2}$ watt (510-M only)		C23	70 $\mu\mu$ F mica					

* Part number of winding only.

D.C. RESISTANCE OF WINDINGS.

Winding.	D.C. Resistance in ohms.
Aerial Coil (M.W.)— Primary (L2) Secondary (L3)	30 4
Aerial Coil (S.W.)— Primary (L4) Secondary (L5)	4 *
Oscillator Coil (M.W.)— Primary (L6) Secondary (L7)	2 6
Oscillator Coil (S.W.)— Primary (L8) Secondary (L9)	* *
I.F. Transformer Windings	12
I.F. Filter (L1)	17.5†
Power Transformer (T1)— Primary Secondary	50 400
Loudspeaker Input Trans- former (T2)— XA2 Primary XA2 Secondary TU2 Primary TU2 Secondary	450 * 490 *

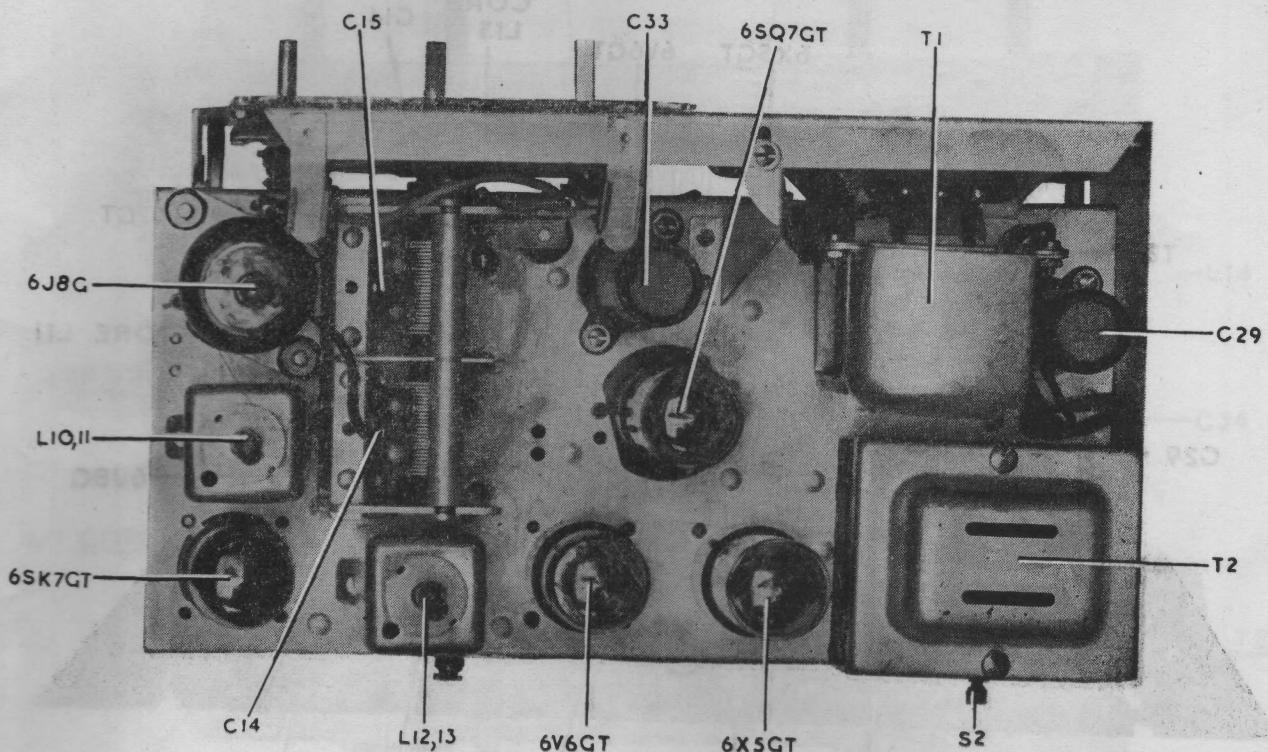
The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

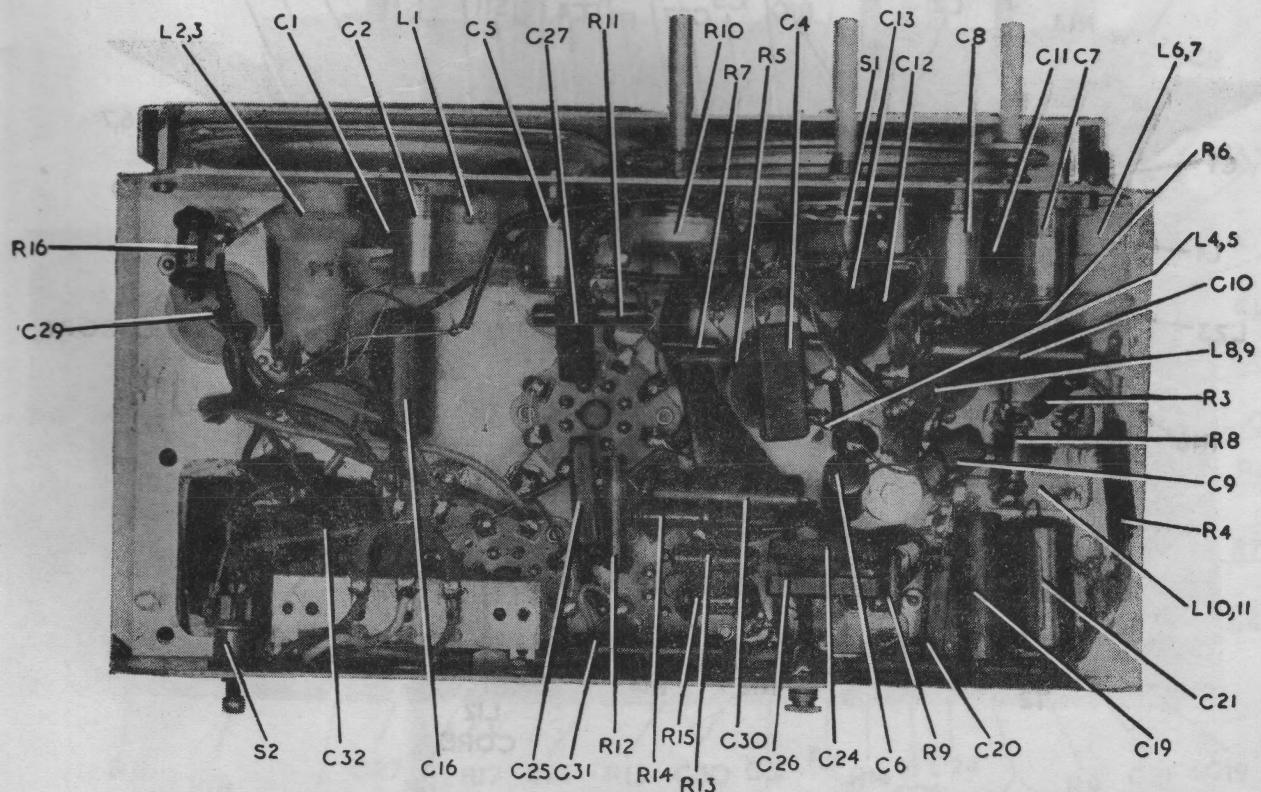
† In some receivers this reading may be as high as 60 ohms.

MECHANICAL REPLACEMENT PARTS.

Item.	Part No.	Item.	Part No.
Model 510-M.			
Cabinet	20164	Dial scale	20334
Cable, Aerial	15452	Dial pointer	20331
Cable, Power	209	Drum, drive	9090
Cable, Volume Control	15451	Knob	4589
Chassis, End	20124	Screen, I.F. transformer	17639
Clamp, Dial Scale	17720	Socket, valve	4704
Clip, Grid	7459	Socket, valve cushion	20142
Cone, Assembly, Loudspeaker	10678	Strip, tag 1 way	7628
Dial Scale	20008	2 way	8021
Dial Pointer Assembly	20132	3 way	8821
Dial Cord	20154	Strip, tag, power	4263
Drum, Drive	20130	Socket, dial lamp	20163
Dust Cover, Loudspeaker	7848	Spindle, tuning	20330
Knob (Colour to be specified)	17603	Terminal, aerial	17717
Socket, Valve	4704	Model 801-G.	
Socket, valve, cushion	20142	Cabinet	C79
Screen, I.F. transformer	17639	Cable, loudspeaker	19188
Spindle, tuning	20141	Cable, volume control	20425
Spring, drive tension	6641	Cable, aerial	15452
Strip, tag—1 way	7628	Cable, power	209
2 way	8863	Cable, power, 3 way	207
Panel, front	15448	Cable, power, motor	21911
Terminal, aerial	17717	Chassis end	20124
Washer, felt	19538	Cone assembly, loudspeaker	9356
Model 712-C, 715-C.			
Bracket, support	20320	Clip, grid	7459
Cabinet, 712-C	C78	Dial frame assembly	20514
715-C	C81	Dial pointer	20522
Cable, power	209	Drum, drive	20130
Cable, loudspeaker	19188	Dust, cover, loudspeaker	9843
Cable, volume control	20416	Knob	4589
Cable, aerial	15452	Socket, valve	4704
Clip, grid	7459	Socket, valve, cushion	20142
Cone assembly, loudspeaker	7071	Strip, tag—1 way	7628
Dust, cover, loudspeaker	10306	2 way	8021
Dial frame assembly	20343	Strip, tag, power	4263
		Screen, I.F. transformer	17639
		Terminal, aerial	5458



CHASSIS (TOP VIEW) MODEL 510-M



CHASSIS (UNDERNEATH VIEW) MODEL 510-M

